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IS 5349 (1986): Staplers [PGD 14: Consumer Products and Allied Equipments]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS : 5349 - 1969

Indian Standard
SPECIFICATION FOR STAPLERS
(Second Reprint MARCH 1993)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

February 1970

AMENDMENT NO. 1 SEPTEMBER 1995
TO
IS 5349 : 1969 SPECIFICATION FOR STAPLERS

(*Page 6, clause 6.2, last sentence*) — Substitute the following for the existing sentence:

'The cadmium plating shall be in accordance with IS 1572 : 1986 and chromium and nickel plating shall be in accordance with service grade No. 1 of IS 1068 : 1993.'

(LM 15)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR STAPLERS

Fasteners for Consumer Goods Sectional Committee, CPDC 22

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Indian Standard

SPECIFICATION FOR STAPLERS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 September 1969, after the draft finalized by the Fasteners for Consumer Goods Sectional Committee had been approved by the Consumer Products Division Council.

0.2 In preparing this standard, considerable assistance has been derived from the following

53-GP-17b Staplers and staples, paper fastening, office type. Canadian Government Specification Board.

JIS-S 6035-1965 Specification for staplers. Japanese Industrial Standards.

GG-S-745a Staplers and staples, paper fastening, office type. Federal Supply Service, USA.

0.3 Clause **9.1** of this standard calls for agreement between the purchaser and the supplier and permits the purchaser to use his option for selection to suit his requirements

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS :2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the requirements for staplers using standard staples prescribed in IS : 5348-1969†.

2. TERMINOLOGY

2.1 For the purpose of this standard, nomenclature for various parts as indicated in Fig. 1 and 2 shall apply.

*Rules for rounding off numerical values (*revised*).

†Specification for staples

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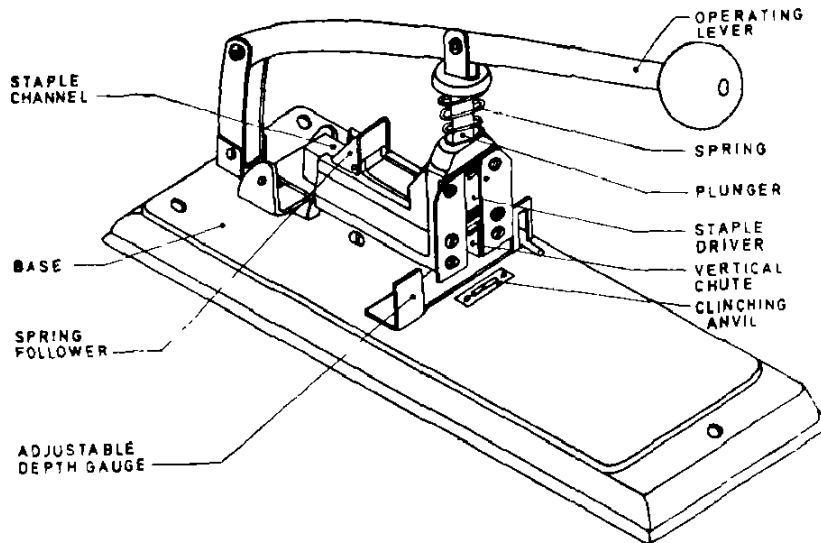


FIG. 1 NOMENCLATURE OF STAPLER, DESK TYPE, HEAVY DUTY

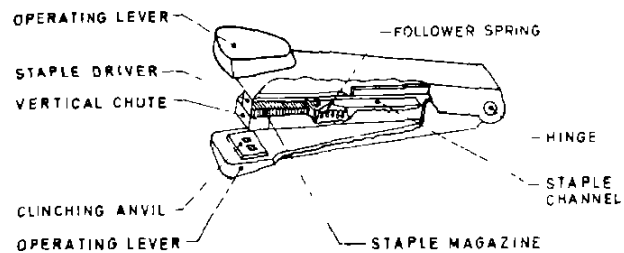


FIG. 2 NOMENCLATURE OF STAPLER, PLIER TYPE

3. TYPES

3.1 The staplers shall be of the following types:

- a) Type I— Desk type:
 - i) Light duty
 - ii) Heavy duty
 - iii) Heavy duty, long reach
- b) Type II— Plier type

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4. MATERIAL

4.1 Various materials employed in the manufacture of staplers shall be of quality best suited for the purpose and these shall satisfy the requirements mentioned in the subsequent clauses.

5. DESIGN, MANUFACTURE AND OPERATION

5.1 Both types of staplers shall be designed for operation with the preformed staples. The driving and clinching actions on to a set of sheets shall be smooth and easy. After each stapling operation, the operating lever, staple driver and other connected components, shall spring back to the starting position and the base of vertical chute shall return to its normal position. The feeding mechanism shall be spring loaded and it shall be capable of feeding subsequent staples under the staple driver after each stapling operation. Removable parts of all heavy duty stapling machines of the same make and model shall be interchangeable. They shall be so constructed that the repair and interchange of parts may be possible.

5.1.1 Springs — All springs used in stapler shall be made of spring steel containing not less than 0.6 percent carbon conforming to Section II of IS . 4454-1967*.

5.1.2 Staple Drivers — Staple drivers shall be made of spring steel containing not less than 0.6 percent carbon and hardened equally over the whole length to not less than 400 HV for light duty desk and plier type staplers and not less than 490 HV for heavy duty staplers.

5.1.3 Anvils — In case of Type I heavy duty staplers, anvils shall be a separate unit attached to the base. The anvil in heavy duty staplers shall be made of steel either hardened throughout or extra hard chromium plated. Hardness shall be not less than 700 HV. In case of Type I light duty or Type II staplers, the anvil may be an integral part of the base.

5.1.4 The desk type staplers and their anvils shall be designed in such a way that it shall be possible to perform the normal clinching, pinning and tacking actions.

5.2 Type I Desk Type Stapler — The stapler shall be constructed for use of preformed staples cemented in a strip form. It shall consist of a base, a staple channel and a follower spring to hold the staples, a staple driver attached to a plunger or striking arm, clinching anvil and other components found necessary for proper functioning and operation. Besides fulfilling the requirements in 5.1, it shall fulfil the requirements mentioned in 5.2.1 to 5.2.3.

*Specification for steel wires for cold formed springs

5.2.1 Range of Stapling—The range of stapling for the different desk type staplers shall be as given below:

| | <i>Range</i> |
|------------------------|---------------|
| | mm |
| Light duty | 50 |
| Heavy duty | 100 |
| Heavy duty, long reach | 200, 300, 400 |

Heavy duty long reach staplers shall be provided with adjustable depth gauges. For light duty, and heavy duty staplers a depth gauge shall be provided at the option of the purchaser.

5.2.2 Vertical Chute—For desk type staplers, all parts of the chute with which the staples come into contact shall be hardened throughout or hard chrome plated to a hardness of 700 *HV*. The surfaces of the vertical chute shall be sufficiently smooth to provide easy passage of staples.

5.2.3 Capacity—The light duty staplers shall accommodate a magazine of 50 staples minimum. Heavy duty, and heavy duty long reach staplers shall accommodate a magazine of 100 heavy duty staples.

5.3 Type II Plier Type Stapler—The plier type stapler shall be designed and constructed for hand operation. Besides, fulfilling the requirements mentioned in 5.1, it shall fulfil the requirements given in 5.3.1 to 5.3.5.

5.3.1 Jaw Opening—The jaw opening of the plier type stapler in the normal position shall be 10 to 13 mm.

5.3.2 Stapling Range—The stapling range or throat depth shall not be less than 30 mm.

5.3.3 Clinching Anvil—The clinching anvil may be an integral part of the base and shall produce a standard clinch.

5.3.4 Staple Chute and Staple Driver—The staple chute of the plier type stapler shall be formed by a separate piece of hardened steel fixed on the face of the chute-end of the channel. The staple chute and staple driver mechanism shall be so constructed as to operate without clogging and jamming.

5.3.5 Capacity—The plier type stapler shall hold a light duty staple magazine containing a minimum of 50 staples.

6. WORKMANSHIP

6.1 All staplers shall be free from burrs, sharp edges, imperfections and other defects which might affect its serviceability.

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6.2 All metal surfaces shall be thoroughly clean and free from dirt, oil grease and moisture before applying the finish. All metal surfaces shall be either painted or plated. The paint shall be stove enamel (see IS: 150-1950* or IS 151-1950†) or air drying enamel (see IS 2932-1964‡ or IS: 2933-1964§) of the specified shade. Prior to painting, all parts shall be degreased, rust-proofed and then protected by an anti-corrosive primer either by brushing or spraying and then finished. The finish shall be hard and shall not readily chip or flake. The plating, if used, shall be cadmium zinc or chromium over nickel. The cadmium plating shall be in accordance with IS: 1572-1960|| and the chromium and nickel plating shall be in accordance with Service Grade No. 3 of IS: 1068-1968*,.

7. TESTS

7.1 Performance Test

7.1.1 Binding and Durability — A complete magazine of staples shall be inserted in different types of stapler to produce the standard clinch. The number of sheets of 50 g/m² white printing paper conforming to IS 1848-1961** for different types of staplers shall be cut and stapled for the number of times as mentioned below. After completion of the operation, the stapler shall not be jammed and the staples shall not show any malformation, that is, they are symmetrically towards left and right and the tips of staples are pressing firmly the paper surface towards the back side.

| Type of Stapler | No. of 50 g/m ² White Printing Paper Sheets | No. of Operations |
|------------------------------|--|-------------------|
| Desk type light duty stapler | 20 (for 6 mm leg staples) | 20 000 |
| Desk type heavy duty stapler | { 25 (for 8 mm leg staples) | 15 000 |
| | { 40 (for 10 mm leg staples) | 10 000 |
| | { 80 (for 12 mm leg staples) | 7 000 |
| | { 120 (for 15 mm leg staples) | 5 000 |
| | { 160 (for 17 mm leg staples) | 3 000 |
| Plier type stapler | { 20 (for 6 mm leg staples) | 20 000 |
| | { 15 (for 4.8 mm leg staples) | 30 000 |

*Specification for ready mixed paint, brushing, finishing, stoving, enamel, colour as required.

†Specification for ready mixed paint, spraying, finishing, stoving, enamel, for general purposes, colour as required.

‡Specification for enamel, synthetic, exterior, Type 1, (a) undercoating, (b) finishing, colour as required (Since revised).

§Specification for enamel, exterior, Type 2, (a) undercoating, (b) finishing, colour as required.

||Specification for cadmium plating (Since revised).

*Specification for electroplated coatings of nickel and chromium on iron and steel (first revision).

**Specification for writing and printing papers (Since revised).

7.2 Shock Test — All staplers shall be tested by dropping the machine on to a concrete floor or slab from a height of 90 to 100 cm. Machine shall be dropped so as to strike twice on top and twice on base, twice on opposite end of machine and twice on both sides of machine. The machine shall not be damaged in any way by this test

8. MARKING

8.1 Each stapler shall be marked with the manufacturer's name, initials or trade-mark, and with the leg size of staples to be used with the stapler.

8.1.1 Each stapler may also be marked with the ISI Certification Mark.

9. PACKING

9.1 The staplers shall be packed as agreed to between the purchaser and the supplier.

Note — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

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